

Remarks

Reconsideration of this Application is respectfully requested.

Upon entry of the foregoing amendment, claims 1-4, 6-11, and 13-25 are pending in the application, with claims 1, 8, 15, and 20 being the independent claims. Claims 1-4, 7-11, 14-20, and 22-25 are sought to be amended. Claims 5 and 12 are sought to be canceled without prejudice to or disclaimer of the subject matter therein. These changes are believed to introduce no new matter, and their entry is respectfully requested.

Based on the above amendment and the following remarks, Applicants respectfully request that the Examiner reconsider all outstanding objections and rejections and that they be withdrawn.

Objection to the Specification

The Examiner objected to the disclosure due to informalities and required Applicants to update the status of the cited U.S. Patent Applications on pages 5 and 10. Applicants have made the required corrections to the specification and respectfully request that the objection be withdrawn.

Claim Objections

The Examiner objected to claims 2, 5, 9, 16, 18, 19, 24, and 25 due to informalities. Applicants have made the required corrections to the non-canceled claims and respectfully request that the objection be withdrawn. Additionally, Applicants corrected similar informalities in claims 3, 4, 10, 11, 17, 22, and 23.

Rejections under 35 U.S.C. § 103

The Examiner has rejected claims 1-5, 8-12, 15, 16, and 20-22 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,459,703 B1 to Grimwood *et al.* ("Grimwood") in view of U.S. Patent No. 4,926,420 to Shimizu ("Shimizu"). Based on the following remarks, Applicants respectfully traverse.

Independent claims 1 and 8 generally relate to a novel way for networking a central controller (e.g., a cable modem termination system) with remote devices (e.g., cable modems), which operate according to different protocols. In particular, independent claim 1 is directed to identifying and routing transmissions from remote devices, which operate according to a first protocol or a second protocol, to protocol-appropriate processors within a central controller. Similarly, independent claim 8 is directed to identifying and routing transmissions from cable modems, which operate according to a proprietary protocol or a DOCSIS protocol, to protocol-appropriate processors within a cable modem termination system. For example, the representative method of claim 1, as currently amended, includes:

assigning one or more time slots on the same upstream channel during which said first group and second group of remote devices may transmit information to said central controller;

identifying transmissions from said first group and said second group of remote devices based on said time slot assignments;

routing transmissions from said first group of remote devices to a first processor operating in accordance with said first protocol within said central controller; and

routing transmissions from said second group of remote devices to a second processor operating in accordance with said second protocol within said central controller.

Grimwood does not teach or suggest each of the foregoing features of claim 1 or each of the features of claim 8. For example, Grimwood does not teach or suggest

assigning one or more time slots on the same upstream channel during which said first group and second group of remote devices (e.g., a first group and a second group of cable modems) may transmit information to said central controller (e.g., a cable modem termination system), and identifying transmissions from said first group and said second group of remote devices *based on said time slot assignments*, as recited in claim 1 and also in claim 8.

Grimwood is directed to "a method for allowing upstream channels having the same multiplexing type but different symbol rates or the same symbol rates but different multiplexing types to be transmitted on the same frequency band without interfering with each other." (Grimwood at Abstract, lines 1-5). Grimwood describes a cable modem termination system (CMTS) scheduler process in FIG. 2A. According to FIG. 2A, the CMTS receives upstream bandwidth requests from cable modems operating according to different protocols and determines which protocol each modem supports. The CMTS awards bandwidth and determines how many physical channels and protocol-specific logical channels are needed to accommodate the bandwidth awards. The CMTS then sends upstream descriptor messages (UCDs) to the modems that define physical and logical channel assignments. The CMTS generates tables that map the modems by service identifier (SID) to particular physical and logical channels. Using the tables, the CMTS then generates and sends MAP messages that define time slot assignments for each logical channel during which the modems can transmit.

While Grimwood describes assigning time slots on an upstream channel to control when each modem transmits to the CMTS, Grimwood does not anywhere teach or suggest identifying transmissions from the modems *based on said time slot assignments*, as recited in claims 1 and 8. Rather, Grimwood teaches a logical channel

based approach to identifying the transmissions. Because each modem transmits on a protocol-specific logical channel, the CMTS of Grimwood identifies the protocol of each transmission based on which logical channel carried the transmission. The CMTS of Grimwood does not use the time slot assignments to determine the protocol of the transmission. Unlike the time slot based approach of claims 1 and 8, the logical channel based approach of Grimwood requires significant overhead in generating the UCDs, mapping tables, and MAP messages necessary to manage the logical channels.

Similarly, independent claims 15 and 20 are directed to systems for identifying and routing transmissions from remote devices (e.g., cable modems) operating according to different protocols to protocol-appropriate processors within a local host (e.g., a cable modem termination system). For example, the representative system of claim 15, as amended, includes:

a first group of one or more remote devices that communicate with a local host in accordance with a first protocol; and

a second group of one or more remote devices that communicate with said local host in accordance with a second protocol,

wherein said local host assigns one or more time slots on the same upstream channel during which said first and second groups of remote devices may transmit information to said local host,

wherein said local host comprises a protocol processor for identifying transmissions from said first and second groups of remote devices based on said time slot assignments, and

wherein said protocol processor routes transmissions from said first group of remote devices to a first processor operating in accordance with the first protocol and wherein said protocol processor routes transmissions from said second group of remote devices to a second processor operating in accordance with the second protocol.

For the same reasons described above with respect to claims 1 and 8, Grimwood does not anywhere teach or suggest a local host (e.g., a cable modem termination system) that assigns one or more time slots on the same upstream channel during which a first

group and a second group of remote devices (e.g., a first group and a second group of cable modems) that communicate in accordance with different protocols may transmit information to said local host, and a protocol processor for identifying transmissions from said first and second groups of remote devices *based on said time slot assignments*, as recited in claim 15 and also in claim 20.

Thus, Grimwood does not teach or suggest all of the features of independent claims 1, 8, 15, and 20, as amended. Furthermore, Shimizu does not supply the missing teachings. At a minimum, any combination of Grimwood and Shimizu fails to teach or suggest a method or system for assigning one or more time slots on the same upstream channel during which remote devices (e.g., cable modems) operating according to different protocols may transmit information to a central controller (e.g., a local host or a cable modem termination system), and for identifying transmissions from the remote devices based on the time slot assignments.

Since neither Grimwood nor Shimizu, alone or in combination, teaches or suggests all of the limitations of claims 1, 8, 15, and 20, the combination of Grimwood and Shimizu fails to support a *prima facie* case of obviousness rejection of claims 1, 8, 15, and 20. Furthermore, the combination of Grimwood and Shimizu fails to support a *prima facie* case of obviousness rejection of claims 2-4, 9-11, 16, 21, and 22 for at least the same reasons as independent claims 1, 8, 15, and 20 from which they depend, and further in view of their own features. Claims 5 and 12 are sought to be canceled. Accordingly, the Examiner's rejection of claims 1-5, 8-12, 15, 16, and 20-22 under 35 U.S.C. § 103(a) is traversed and Applicants respectfully request that the rejection be reconsidered and withdrawn.

The Examiner has rejected claims 6, 7, 13, 14, 17-19, and 23-25 under 35 U.S.C. § 103(a) as being unpatentable over Grimwood in view of Shimizu, and further in view of U.S. Patent No. 6,751,230 B1 to Vogel *et al.* ("Vogel"). Based on the following remarks, Applicants respectfully traverse.

As described above, Grimwood does not teach or suggest all of the features of independent claims 1, 8, 15, and 20, as amended. Furthermore, Shimizu and Vogel do not supply the missing teachings. At a minimum, any combination of Grimwood, Shimizu, and Vogel fails to teach or suggest a method or system for assigning one or more time slots on the same upstream channel during which remote devices (e.g., cable modems) operating according to different protocols may transmit information to a central controller (e.g., a cable modem termination system), and for identifying transmissions from the remote devices based on the time slot assignments.

Since neither Grimwood, Shimizu, or Vogel, alone or in combination, teaches or suggests all of the limitations of claims 1, 8, 15, and 20, the combination of Grimwood, Shimizu, and Vogel fails to support a *prima facie* case of obviousness rejection of claims 6, 7, 13, 14, 17-19, and 23-25 for at least the same reasons as independent claims 1, 8, 15, and 20 from which they depend, and further in view of their own features. Accordingly, the Examiner's rejection of claims 6, 7, 13, 14, 17-19, and 23-25 under 35 U.S.C. § 103(a) is traversed and Applicants respectfully request that the rejection be reconsidered and withdrawn.

Conclusion

All of the stated grounds of objection and rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding objections and rejections and that they be withdrawn. Applicants believe that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Amendment and Reply is respectfully requested.

Respectfully submitted,

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